UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

_____

)

UNITED STATES OF AMERICA   )

)

      v.   )   CRIMINAL NO. 21-cr-10104-PBS

)

VLADISLAV KLYUSHIN   )   (Leave to file granted on 1/6/2023)

      Defendant   )

_____)

**DEFENDANT VLADISLAV KLYUSHIN'S SUPPLEMENTAL REQUEST FOR
DAUBERT HEARING AND TO EXCLUDE TESTIMONY OF MAXWELL CLARKE**

Now comes the defendant Vladislav Klyushin, by and through undersigned counsel, and

hereby respectfully submits this supplemental request to hold a *Daubert* hearing and exclude the

statistical analyses and related testimony of SEC financial analyst Maxwell Clarke. A

supplemental expert disclosure that the government provided on December 22, 2022, is attached

hereto as Exhibit 1. A rebuttal expert report authored by Michael Cullan is attached hereto as

Exhibit 2.

In brief, Mr. Clarke's proposed testimony lacks relevance under Fed. R. Evid. 401-02 —

and any minimal relevance it might have pales against its risks of misleading and unfairly

prejudicing the jury under Rule 403 — because it (1) rests on potentially erroneous and

misleading data; (2) improperly uses the Fisher Exact Test and resulting P-value; and (3) hinges

on a faulty premise: namely, that the stock market is a game of chance.

Specifically, Mr. Clarke proposes to testify that (1) the FA-1 and 2 trading patterns of Mr.

Klyushin and his alleged coconspirators "cannot be explained by chance"; (2) the "probability of

such trading occurring by chance is less than one in a trillion"; (3) "chance" can't "explain the

frequency with which" the alleged conspirators "bought" and "shorted a company's shares

before it significantly outperformed" or "underperformed analysts' earnings expectations,"

respectively; (4) the "likelihood that this would occur by chance [is] less than one in a trillion";

and (5) the odds of a "chance" temporal coincidence between FA2 intrusions and corresponding

first trades by the alleged conspirators are "less than one in a million." Dkt. 125 at 21-22.

Appreciating the unique and inordinately prejudicial nature of the one-in-a-trillion and

one-in-a-million figures — and citing the "black box" issues they implicate — the Court has

expressed reservations about admitting them. Rather than belabor those points, we simply note

that it would take a virtually unassailable showing of reliability to overcome the figures'

astronomical capacity for prejudice — and alleviate the confrontation concerns the Court has

identified — thereby rendering them admissible.

I.   Data Errors and Misleading Assumptions and Selections.

At the outset, statistical analyses are only as relevant and accurate as the underlying data

and methodologies on which they rely. *See e.g., Sheehan v. Daily Racing Form, Inc.*, 104 F.3d

940, 942 (7th Cir. 1997) (Fisher Exact Test flunked *Daubert* scrutiny where expert arbitrarily

omitted data). While the defense does not have sufficient time to review all the data

(encompassing tens, if not hundreds, of thousands of line items) that Mr. Clarke compiled and

relied upon in devising his statistics and forming his opinions, a spot check of the transactions

charged in the indictment reveals inaccuracies that undermine either the data that Mr. Clarke

relied upon or the government's charged transactions. The indictment in this case charges

transactions or unauthorized intrusions into the earnings reports of 10 companies. *See*

Indictment, Dkt. 9. One of those transactions, featuring prominently in both the indictment and

search warrant affidavits for Mr. Klyushin's iCloud account, involves the stock of Avnet, Inc.

See Indictment, Dkt. 9, at ¶ 36 ("On or about January 21, 2020, ERMAKOV or another

conspirator used the username and password of an employee of Filing Agent 1 (the 'FA 1

Employee Credentials') to obtain unauthorized access to the company's computer network and to view earnings-related files of Avnet, Inc., the securities of which are publicly traded on the NASDAQ."). According to Mr. Clarke's data, however, FAs 1 and 2 were not associated with the Jan. 23, 2020 Avnet earnings report that Mr. Klyushin (through Mr. Ermakov) purportedly traded upon.

To create a list from 38,359 earnings announcements that were associated with FAs 1 and 2 between July 17, 2018, and September 30, 2020, the government did not rely on the client lists of the relevant filing agents. Instead, the government purportedly compiled the list through a more accurate methodology: "Mr. Clarke did not use an FA1 or FA2 'client list' to determine market share because the accession number is the most precise identifier of which filing agent, if any, was involved in a particular earnings announcement. An announcing company's presence on an FA1 client list, for example, would not indicate whether the company used the filing agent for a particular announcement or not." *See* Exhibit 1, n. 2. If Mr. Clarke's analyses are correct, then Mr. Klyushin could not have traded in Avnet based on material nonpublic information obtained from FA-1 because FA-1 simply did not have that information and was not associated with that earnings report filing. Alternatively, if the government alleges error in Mr. Clarke's method of compiling earnings reports associated with FA-1 and FA-2, that casts serious doubt on the accuracy of his entire analyses. Indeed, there are many FA-1 and -2 client companies that, according to Mr. Clarke's analyses, did not use the two filing agents for some or all their earnings reports.[1] Additionally, Mr. Clarke's data is incomplete. In some instances, there is data

---

[1] Indeed, FA-2's client list reveals 55,000+ entries during the relevant time.

missing that should have been incorporated, including earnings information available for some

but not all the transactions:[2]

account	company_	filed_by_ad_t	anndt	event_number	anndats	earnings	filing_agent	Filename
M13	0001528849	1	9/10/2019 16:15	70614	9/10/2019			edgar/data/1528849/0001558370-19-008556.txt
M13	0001528849	1	12/4/2019 16:23	70615	12/4/2019			edgar/data/1528849/0001558370-19-011335.txt
M13	0001528849	1	3/30/2020 16:05		3/30/2020			edgar/data/1528849/0001558370-20-003383.txt
M13	0001528849	1	6/4/2020 16:05	70617	6/4/2020			edgar/data/1528849/0001558370-20-007197.txt
M13	0001528849	1	9/9/2020 16:16		9/9/2020			edgar/data/1528849/0001558370-20-011091.txt

Accurate data is essential to Mr. Clarke's analyses. Mr. Clarke's analyses start by

calculating the percentage of companies that are serviced by FA-1 and FA-2. According to his

review of all 38,359 earnings announcements that were filed with the SEC's EDGAR system

during the relevant time, "16,810 of these earnings announcements had an accession number

indicating that FA1 or FA2 handled the SEC filing related to that announcement, representing

approximately 44 percent of all filings in the period." Exhibit 1 at 2. Based on this number, Mr.

Clarke concludes that if Mr. Klyushin was randomly trading in the earnings events of companies

(a flawed assumption as detailed below), he'd be expected to have traded in only 44% rather than

96% percent of the earnings reports associated with FA-1 and FA-2. The 44% figure, however,

is only accurate if Mr. Clarke's methodology for determining earnings events related to the two

filing agents is precise. Indeed, based on the defense review of the data, the 38,359 earnings

announcements during the relevant period originated from 5077 companies. At the relevant time,

3271 of those companies were clients of FAs 1 and 2. Accordingly, FAs 1 and 2 represented

64% – not 44% – of the companies making filings. This 20% delta would change not only the

results of the Fisher Exact Test, but also Mr. Clarke's exorbitant one-in-a-trillion P-value.

Additionally, the government's analysis skews the numbers in its own favor by excluding Mr.

Klyushin's trading in companies unrelated to FAs 1 and 2 and trading not immediately preceding

---

[2] Interestingly, earnings data Mr. Clarke provided indicates that M-13, Mr. Klyushin's company, lost approximately $700,000 because of its trading.

an earnings announcement. Indeed, based on the government's data, Mr. Klyushin's accounts reflected 547 trades. Of those 547, 204 were in companies unrelated to FAs 1 and 2. Thus, based on the sum total of trading in Mr. Klyushin's accounts, 62.7% of his transactions were in companies serviced by FAs 1 and 2 while 37.2% were in companies serviced by other filing agents or who made filings by other means – figures wholly in line with FA-1's and -2's market share. Furthermore, only 65% of Mr. Klyushin's trades were profitable based on Mr. Clarke's statistics.

Mr. Clarke's statistics suffer from other serious flaws. To get to his one-in-a-trillion chance figure, Mr. Clarke assumes that Mr. Klyushin and everyone else randomly trades in companies, *i.e.*, that traders blindly point their finger at a list of 5077 companies and start trading. That is a false assumption, not built on any reliable data. Indeed, **no one** randomly picks and trades companies. If you were to run Mr. Clarke's Fisher Exact Test on an individual who trades the S&P 500, you'd get a similar result – that trader would be disproportionately targeting companies serviced by FAs 1 and 2. Why? Because 354 of the 503 companies that make up the S&P 500 – or 70.3% – are serviced by those two filing agents. Moreover, the 503 companies comprising the S&P 500 cover "approximately 80% of available market capitalization," https://www.spglobal.com/spdji/en/indices/equity/sp-500/#overview, meaning that most traders in the world disproportionately trade in stocks covered by FAs 1 and 2. Similarly, FAs 1 and 2 service 80% (24 of 30) companies that make up the Dow Jones Index. Anyone trading the Dow Jones Index would thus also be disproportionately trading in companies serviced by those two filing agents.

Based on Mr. Clarke's analysis, fabled investor Warren Buffet and Congresswoman Nancy Pelosi's trading targeted FA-1 and -2 related companies. Seventy-three percent of Mr.

Buffet's portfolio consists of companies that use FAs 1 and 2. *See*

https://www.gurufocus.com/guru/warren%2Bbuffett/current-portfolio/portfolio?view=table.

Three of the five companies (60%) that Congresswoman Pelosi traded in January 2022 were

covered by those two filing agents. *See* the https://disclosures-clerk.house.gov/public_disc/ptr-

pdfs/2022/20020515.pdf.

This same analysis applies to Mr. Clarke's second statistic, *i.e.*, that there is a "one in a

trillion" chance Mr. Klyushin correctly predicted whether to buy or sell a stock. The assumption

that traders randomly buy or sell stocks is, again, nonsensical. No one does that. Otherwise,

millions of jobs and thousands of companies that purport to analyze and pick stocks to purchase

or sell based on claimed information advantages or models would be superfluous.

Put more squarely, Mr. Clarke's proposed testimony explicitly assumes, by its terms, that

a fair, efficient, properly functioning market operates — like a coin flip, Dkt. 125 at 21 — via

random "chance." So the testimony's relevance necessarily turns on the validity of that

supposition. And it is a demonstrable fallacy.

After all, the Supreme Court recognized over 40 years ago, in the seminal criminal case

in this area, that the law does not prohibit securities transactions resulting from structural

disparities in information – what Justices Blackmun and Marshall called "exploit[ing] …

structural informational advantages through trading in affected securities." *Chiarella v. US*, 445

U.S. 222, 251 (1980) (Blackmun and Marshall, JJ., dissenting). To the contrary, a fair and

efficient market *encourages* and *rewards* advantages in information gained through diligence,

industry and skill. In fact, as a pair of distinguished Second Circuit judges recently reminded,

"securities analysts, who routinely 'ferret out and analyze information' from corporate insiders to

price accurately a security, are *critical* to a functioning market." *United States v. Blaszczak*, Nos.

18-2811, -2825, -2867, -2878, __ F.4 th __, 2022 WL 17926047, at *15 & n.25 (CA2 Dec. 27,

2022) (Walker and Kearse, JJ., concurring) (quoting *Dirks v. SEC*, 463 U.S. 646, 658 n.17

(1983)) (emphasis supplied). As such, the antifraud proscriptions must not be construed so

broadly as to "unduly impair[] the normal functioning of security analysts as informational

intermediaries between companies and the market." *Id.* at *13.

Mr. Clarke's third statistic and opinion raise a slightly different issue. He seeks to opine,

"based on a non-parametric permutation test, that there is a statistical relationship between the

time of the download and the investors' first trade; that in nearly all cases, the download

preceded the investors' first trade; and that that relationship cannot be explained by chance."

Exhibit 1 at 3. Mr. Clarke, however, arbitrarily looked only at transactions between February 4,

2018, and September 30, 2020 (the charged conspiracy period), purposely ignoring any

transactions, particularly transactions by Sladkov or Irzak, in the same stocks prior to the alleged

hack.

In other words, Mr. Clarke ignored the fact that those two individuals picked and traded

those same stocks prior to any intrusion – direct evidence that the selections were not based on

alleged intrusions into those companies. To the extent the government aims to rely on trading by

Irzak and Sladkov as evidence against Mr. Klyushin, the defense respectfully asks that the Court

compel it to produce their trading records from 2016, 2017, and following September 2020, to

prove they transacted in the same companies before and after alleged intrusions.

Mr. Clarke's statistic also doesn't take into account that Mr. Klyushin did not trade in

most companies whose information was accessed by alleged intruders. Indeed, based on log files

from FA-2, 786 companies were unlawfully accessed. Mr. Klyushin, however, traded in only 140

or 18% of those companies. The same applies to companies serviced by FA-1. According to FA-

1 records, 111 companies had their records reviewed, but Mr. Klyushin only traded in 33 of them, or 29%.

In short, with the right assumptions and data selections you can correlate any set of events. Indeed, the defense's rebuttal expert, Michael Cullan, using the same data provided by the government, found that Mr. Klyushin purposely targeted companies that had "32" in their Central Index Key. *See* Exhibit 2 at 4.

II.   Inappropriate use of Fisher Exact Test and P-Values.

Designed in 1934, the Fisher Exact Test was created for "simple, controlled experiments." Exhibit 2 at 3. It relies on a "contingency table[]" to compare the "relationship between multiple categorical variables." *Id.* According to Mr. Cullan, "Fisher's exact test, in particular, is poorly suited for the data at hand, which is collected from historical events rather than a carefully designed experiment. The simplistic assumptions of Fisher's exact test make it easier for the test to return an extreme result, even for data with unaddressed confounding variables, i.e. other relevant quantities which explain the patterns in the data, but which were excluded." Exhibit 2 at 1. Troublingly, the government applies the Fisher Exact Test to the vast universe of every earnings announcement over a two-year period without considering any other variables:

> This issue is exacerbated by the choices made in collecting and filtering the data set. As described in Mr. Clarke's disclosure dated December 22, 2022,

>> "Mr. Clarke then identified the number of earnings announcements that took place during the time that each of the eight traders was active. For example, between Vladislav Klyushin's first trade in this period (July 17, 2018) and his last (September 30, 2020), there were 38,359 earnings announcements."

> This entire universe of earnings announcements is used to compute the results of the statistical tests. Every single earnings announcement is treated as equally relevant as a potential trading opportunity under the lens of the analysis applied.

No justification is made that all possible data points should be used, as compared to a smaller subset of earnings events, which, for example, might have been restricted to companies in certain sectors or with particular stock performance patterns. These sorts of variables (e.g. sector, market capitalization) are not included in the dataset. As a result, they can not be used to evaluate alternative explanations. The decisions to include so many data points and to exclude other possibly relevant variables have strong implications on the analyses performed. In particular, they restrict the analyst to simplistic techniques which systematically produce more extreme results when conducted with larger data sets.

Exhibit 2 at 1.

Thus, Mr. Clarke's use of the Fisher Exact Test on such a large historical dataset without considering any other variable "exaggerates the usefulness of its conclusions." *People Who Care v. Rockford Bd. of Educ., School Dist. No. 205,* 111 F.3d 528, 537–538 (7th Cir. 1997) ("a statistical study that fails to correct for salient explanatory variables, or even to make the most elementary comparisons, has no value as causal explanation and is therefore inadmissible in a federal court"); *Sheehan v. Daily Racing Form, Inc.,* 104 F.3d 940, 942 (7th Cir. 1997) (holding that expert's "failure to correct for any potential explanatory variables other than age" excluded analyst's finding that "there was a significant correlation between age and retention").

Similarly, Mr. Clarke uses the P-value (*i.e.*, his one-in-a-trillion figure) in a way that defies known statistical principles:

All three [of Mr. Clarke's opinions] frame the results as the probability that the event in question would occur by chance, and the disclosure does not provide a name or definition of the types of quantities (e.g. "1 in a trillion") that are referenced. The quantities in question are called p-values. Mr. Clarke's expert disclosure interprets p-values in a manner inconsistent with their formal definition and recommended practice.

The American Statistical Association's Statement on Statistical Significance and P-values provides the following six principles:

1. P-values can indicate how incompatible the data are with a specified statistical model.
2. P-values do not measure the probability that the studied hypothesis is true, or the probability that the data were produced by random chance alone.

3. Scientific conclusions and business or policy decisions should not be based only on whether a p-value passes a specific threshold.
4. Proper inference requires full reporting and transparency.
5. A p-value, or statistical significance, does not measure the size of an effect or the importance of a result.
6. By itself, a p-value does not provide a good measure of evidence regarding a model or hypothesis.

Reference: Wasserstein, R. L., & Lazar, N. A. (2020). ASA statement on statistical significance and P-values. In The theory of statistics in psychology (pp. 1-10). Springer, Cham.

Mr. Clarke's expert disclosure repeatedly contradicts the second principle listed above, which states that p-values do not describe "the probability that the data were produced by random chance alone." By not referencing p-values by name, Mr. Clarke's disclosure further obscures this fact.

Exhibit 2 at 2.

More than inappropriately using the Fisher Exact Test in the circumstances of this case, Mr. Clarke's use of the P-value (*i.e.*, the one-in-a-trillion figure) thus misleadingly belies known statistical principles.

III.   Mr. Clarke's statistics should also be excluded under Rules 401-03.

Finally, the Court has discretion to exclude even relevant evidence "if its probative value is substantially outweighed by a danger of … unfair prejudice, confusing the issues, misleading the jury, undue delay, wasting time, or needlessly presenting cumulative evidence." Fed. R. Evid. 403. The danger of confusing the issues and misleading the jury looms large with these statistical models, which are based on insufficient and potentially erroneous data, flawed assumptions and poorly suited statistical tests.

Stripped to its essence, Mr. Clarke's proposed testimony seeks to offer the jury what amounts to a strawman or a red herring – one that would effectively revive the very information-advantage-as-fraud theory discredited in *Chiarella*. More precisely, correlating the alleged conspirators' trading patterns to the likelihood of chance occurrence speaks to no relevant issue

in the case because it (a) falsely assumes the market is a creature of chance and (b) fails to account for the possibility that the patterns arose from factors other than insider trading based on hacked information, *e.g.*, informational advantages obtained through legitimate means such as effort, analysis, study and skill. By the same token, setting up chance as an artificial comparator invites the jury to improperly infer that *unless* the trading patterns occurred randomly – if they did *not* occur by chance – then they must have been illegal or otherwise wrongful. Indeed, there is a significant danger that the jury will confuse correlation with causation and convict Mr. Klyushin solely on the basis that he, like many others, traded in companies serviced by FAs 1 and 2. *See Brown v. Ent. Merchants Ass'n*, 564 U.S. 786, 800 (2011) (Scalia, J.) (explaining that studies "based on correlation, not evidence of causation," do not establish causative relationships); *United States v. Valencia*, 600 F.3d 389, 425 (5th Cir. 2010) ("Evidence of mere correlation, even a strong correlation, is often spurious and misleading when masqueraded as causal evidence, because it does not adequately account for other contributory variables."). The proposed testimony thus carries enormous risks of prejudice and confusion. On these grounds alone, the Court should exclude it under Rules 401-03.

Respectfully Submitted,

Vladislav Klyushin,
By His Attorney,

/s/ Maksim Nemtsev
Maksim Nemtsev, Esq.
Mass. Bar No. 690826
20 Park Plaza, Suite 1000
Boston, MA 02116
(617) 227-3700
menemtsev@gmail.com

/s/ Marc Fernich
Marc Fernich
Law Office of Marc Fernich
800 Third Avenue
Floor 20
New York, NY 10022
212-446-2346
Email: maf@fernichlaw.com

Dated: January 9, 2023

CERTIFICATE OF SERVICE

I, Maksim Nemtsev, hereby certify that on this date, January 9, 2023, a copy of the foregoing documents has been served via Electronic Court Filing system on all registered participants.

/s/ Maksim Nemtsev
Maksim Nemtsev, Esq.